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EXAMINER
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ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
	09/881,500	CHAUDHURI ET AL.
Office Action Summary	Examiner	Art Unit	
	Etienne P LeRoux	2161	

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 23 November 2004 .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-10,12-17,19,20,22 and 24-30* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 2, 4-10, 12-17, 19, 20, 22 and 24-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 June 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

   If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____ .

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
   application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

   a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)   4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   5) ☐ Notice of Informal Patent Application (PTO-152)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .   6) ☐ Other: .

Continued Examination

A request for continued examination under 37 CFR 1.114, including the fee set forth in

37 CFR 1.17(e), was filed in this application after final rejection. Since this application is

eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e)

has been timely paid, the finality of the previous Office action has been withdrawn pursuant to

37 CFR 1.114. Applicant's submission filed on November 23, 2004 has been entered.

Claim Status:

Claims 1, 2, 4-10, 12-17, 19-20, 22 and 24-30 are pending. Claims 3, 11, 18, 21 and 23

have been cancelled. Claims 1, 2, 4-10, 12-17, 19-20, 22 and 24-30 are rejected as detailed

below.

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a
separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed
150 words in length since the space provided for the abstract on the computer tape used by the
printer is limited. The form and legal phraseology often used in patent claims, such as "means"
and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist
readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the
title. It should avoid using phrases which can be implied, such as, "The disclosure concerns,"
"The disclosure defined by this invention," "The disclosure describes," etc.

The abstract comprises more that 150 words.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the

claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c)

and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2, 4, 5, 7, 8, 24-26 and 28-30 are rejected under 35 U.S.C. 103(a) as being

unpatentable over US Pat No 6,772,142 issued to Kelling et al (hereafter Kelling) in view of US

Pat No 5,870,752 issued to Gibbons et al (hereafter Gibbons).

Claims 1 and 24:

Kelling discloses creating at least one new bucket in response to a query on the database,

each new bucket having bucket boundaries corresponding to a range of tuple attribute values

returned by the query and a bucket frequency corresponding to a number of tuples returned by

the query [Kelling Fig 3, step 240, col 5, lines 23-27].

Kelling discloses the elements of claim 1 as noted above but does not disclose

establishing a logical relationship between the new bucket and the existing bucket such that the

existing bucket is a parent bucket of the new bucket. Gibbons discloses establishing a logical

relationship between the new bucket and the existing bucket such that the existing bucket is a

parent bucket of the new bucket [Figs 4 and 5, col 10, lines 25-38]. It would have been obvious

to one of ordinary skill in the art at the time the invention was made to modify Kelling to include

establishing a logical relationship between the new bucket and the existing bucket such that the

existing bucket is a parent bucket of the new bucket as taught by Gibbons for the purpose of

maintaining the parent bucket frequency below the threshold [Fig 5]. The skilled artisan would

have been motivated to modify Kelling per the above such that accuracy of the histogram is

maintained by splitting the bucket in half in order to avoid the expense of recomputing the

histogram [Gibbons, col 10, lines 25-37].

Furthermore, the combination of Kelling and Gibbons discloses storing the self-tuning

histogram that includes the new bucket in memory [Gibbons, Fig 1, 14]

Furthermore, the combination of Kelling and Gibbons discloses wherein bucket

boundaries of each new bucket fall within bucket boundaries of the parent bucket of the new

bucket [Gibbons, parent is split at its median value to produce buckets 66 and 68, Fig 5 and col

10, lines 38-50].

Claim 2:

The combination of Kelling and Gibbons discloses the elements of claim 1 as noted

above. However, regarding claim 2, Kelling fails to disclose a rectangular bucket. Gibbons

discloses a rectangular bucket [Gibbons Figs 2 and 5, col 4, lines 39-50]. It would have been

obvious to one of ordinary skill in the art at the time the invention was made to modify Kelling

to include a rectangular bucket as taught by Gibbons for the purpose of providing a convenient

means of grouping attribute values of a database into subsets (buckets) and approximating true

attribute values and their frequency distributions based on summary statistics maintained in each

bucket [Gibbons, col 4, lines 39-49].

Claim 4:

The combination of Kelling and Gibbons discloses the elements of claim 1 as noted

above and furthermore, Gibbons discloses a child bucket forms a hole in the parent bucket of the

child bucket [Gibbons Fig 5][1]

Claim 5:

The combination of Kelling and Gibbons discloses the elements of claim 1, however,

regarding claim 5, Kelling does not discloses merging buckets based on a merge criterion when

the total number of buckets exceeds a predetermined budget. Gibbons discloses merging buckets

based on a merge criterion when the total number of buckets exceeds a predetermined budget

[col 10, lines 25-37]. It would have been obvious to one of ordinary skill in the art at the time

the invention was made to modify Kelling to include merging buckets based on a merge criterion

when the total number of buckets exceeds a predetermined budget as taught by Gibbons for the

purpose of maintaining a fixed number of buckets [Gibbons, col 10, line 33]. The skilled artisan

would have been motivated to improve the invention of Kelling per the above such that the high

cost of recomputing the histogram might be avoided by keeping the number of buckets fixed

[Gibbons, col 10, lines 35-38].

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[1] Examiner interprets the specification to mean a child bucket corresponds to a hole that is created in the histogram

Claim 7:

The combination of Kelling and Gibbons discloses the elements of claim 1 as noted

above, however, regarding claim 7, Kelling does not disclose shrinking the boundaries of a new

bucket if the boundaries of the new bucket intersect any existing boundaries. Gibbons discloses

shrinking the boundaries of a new bucket if the boundaries of the new bucket intersect any

existing boundaries [col 8, lines 29-34, col 15, lines 40-42]. It would have been obvious to one

of ordinary skill in the art at the time the invention was made to modify Kelling to include

shrinking the boundaries of a new bucket if the boundaries of the new bucket intersect any

existing boundaries as taught by Gibbons for the purpose of ensuring that the frequency count for

each bucket is unique by ensuring that buckets do not overlap [col 3, lines 1-5]. The skilled

artisan would have been motivated to modify Kelling per the above such that the histogram

representation includes acceptable low-error estimates [col 4, lines 40-50].

Claim 8:

The combination of Kelling and Gibbons discloses the elements of claim 1 as noted

above, and furthermore, Gibbons discloses the frequency of the parent bucket is diminished by

the frequency of the child bucket [Fig 5].

Claim 25:

The combination of Kelling and Gibbons discloses the elements of claim 24 as noted

above, but regarding claim 25, Kelling does not disclose wherein the tuning component

populates the parent bucket with a child bucket that has boundaries corresponding to a range of

attribute values present in the query results and a child bucket frequency corresponding to a

number of tuples present in the query results. Gibbons discloses wherein the tuning component

populates the parent bucket with a child bucket that has boundaries corresponding to a range of

attribute values present in the query results and a child bucket frequency corresponding to a

number of tuples present in the query results [col 5, line 64- col 6, line 21]. It would have been

obvious to one of ordinary skill in the art at the time the invention was made to modify Kelling

to include wherein the tuning component populates the parent bucket with a child bucket that has

boundaries corresponding to a range of attribute values present in the query results and a child

bucket frequency corresponding to a number of tuples present in the query results as taught by

Gibbons for the purpose of defining various concepts relating to the query results. The skilled

artisan would have been motivated to improve the invention of Kelling by creating an accurate

histogram [col 5, lines 64-65].

Claim 26:

The combination of Kelling and Gibbons discloses the elements of claim 24 as noted

above, however, regarding claim 26, Kelling does not disclose a merging component that merges

buckets based on a merge criteria. Gibbons discloses a merging component that merges buckets

based on a merge criteria [col 10, lines 25-37]. It would have been obvious to one of ordinary

skill in the art at the time the invention was made to modify Kelling to include a merging

component that merges buckets based on a merge criteria as taught by Gibbons for the purpose

of maintaining a fixed number of buckets [Gibbons, Col 10, line 33]. The skilled artisan would

have been motivated to improve the invention of Kelling per the above such that the high cost of

recomputing the histogram might be avoided by keeping the number of buckets fixed [Gibbons,

col 10, lines 35-38].

Claim 28:

The combination of Kelling and Gibbons discloses the elements of claim 24 as noted above, however, regarding claim 28, Kelling does not disclose wherein the tuning component shrinks the boundaries of the child bucket if the child bucket boundaries intersect any other bucket boundaries. Gibbons discloses wherein the tuning component shrinks the boundaries of the child bucket if the child bucket boundaries intersect any other bucket boundaries [col 8, lines 29-34, col 15, lines 40-42]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kelling to include wherein the tuning component shrinks the boundaries of the child bucket if the child bucket boundaries intersect any other bucket boundaries as taught by Gibbons for the purpose of ensuring that the frequency count for each bucket is unique by ensuring that buckets do not overlap [col 3, lines 1-5]. The skilled artisan would have been motivated to improve the invention of Kelling per the above such that the histogram representation includes acceptable low-error estimates [col 4, lines 40-50].

Claim 29:

The combination of Kelling and Gibbons discloses the elements of claim 24 and 25 as noted above, and furthermore, Gibbons discloses the frequency of the parent bucket is diminished by the frequency of the child bucket [Fig 5].

Claim 30:

Kelling discloses a component [Fig 3, 245] that receives a histogram having at least a parent bucket populated with query results [Kelling Fig 3, step 240, col 5, lines 23-27]. Kelling discloses the elements of claim 30 as noted above but does not disclose a tuning component that iteratively populates the parent bucket with a child bucket wherein the child bucket is completely contained within the parent bucket. Gibbons discloses a tuning component that iteratively

populates the parent bucket with a child bucket wherein the child bucket is completely contained

within the parent bucket [Figs 4 and 5, col 10, lines 25-38]. It would have been obvious to one

of ordinary skill in the art at the time the invention was made to modify Kelling to include a

tuning component that iteratively populates the parent bucket with a child bucket wherein the

child bucket is completely contained within the parent bucket as taught by Gibbons for the

purpose of providing a histogram maintenance which detects when the bucket frequency exceeds

a threshold [Fig 5]. The skilled artisan would have been motivated to modify Kelling per the

above for the purpose of maintaining accuracy of the approximate histogram while reducing the

number of expensive recomputations. When a given bucket count reaches the threshold T, the

bucket is split in half instead of recomputing the histogram. In order to maintain the bucket

count, two adjacent buckets whose total count does not exceed T are merged, if indeed such a

pair of buckets exist [Gibbons, col 10 lines 25-37].

Claims 9, 10, 12-17, 19, 20 and 22 are rejected under 35 U.S.C. 103(a) as being

unpatentable over US Pat No 6,507,840 issued to Ioannidis et al (hereafter Ioannidis) in view of

Gibbons.

Claims 9, 16 and 20:

Ioannidis discloses (a) examining the results of a query executed on the database [Fig 5,

col 11, line 57 – col 12, line 24]

Ioannidis discloses the elements as noted above but does not disclose (b) creating at least

one candidate hole in the histogram based on the results of the query such that the candidate hole

has boundaries corresponding to a range of attribute values returned by the query and a

frequency corresponding to a number of tuples returned by the query. Gibbons discloses creating at least one candidate hole in the histogram based on the results of the query such that the candidate hole has boundaries corresponding to a range of attribute values returned by the query and a frequency corresponding to a number of tuples returned by the query [Fig 4, 54]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ioannidis to include creating at least one candidate hole in the histogram based on the results of the query such that the candidate hole has boundaries corresponding to a range of attribute values returned by the query and a frequency corresponding to a number of tuples returned by the query as taught by Gibbons for the purpose of reducing the size of the bucket below a threshold value [col 10, lines 40-50]. The skilled artisan would have been motivated to improve the invention of Ioannidis per the above such that the histogram maintenance process ensures the accuracy of the histogram [col 9, lines 24-28].

Furthermore, the combination of Ioannidis discloses (c) modifying the boundaries of each candidate hole such that the boundaries of the modified hole are completely contained within the boundaries of at least one existing parent bucket and do not partially intersect the boundaries of any existing bucket [Gibbons, col 12, line 49, col 15, line 40-42]

Furthermore, the combination of Ioannidis and Gibbons discloses (d) creating a new child bucket that has a child frequency in the histogram corresponding to each modified hole [Gibbons, Fig 5].

Furthermore, the combination of Ioannidis and Gibbons discloses (e) storing the modified self-tuning histogram in one or more computer readable media [Ioannidis, col 5, lines 12-20].

Claim 10:

The combination of Ioannidis and Gibbons discloses the elements of claim 9 as noted

above. However, regarding claim 10, Ioannidis fails to disclose a rectangular bucket. Gibbons

discloses a rectangular bucket [Gibbons Figs 2 and 5, col 4, lines 39-50]. It would have been

obvious to one of ordinary skill in the art at the time the invention was made to modify Ioannidis

to include a rectangular bucket as taught by Gibbons for the purpose of providing a convenient

means of grouping attribute values of a database into subsets (buckets) and approximating true

attribute values and their frequency distributions based on summary statistics maintained in each

bucket [Gibbons, col 4, lines 39-49].

Claim 12:

The combination of Ioannidis and Gibbons discloses the elements of claim 9 as noted

above, however, regarding claim 12, Ioannidis does not disclose merging buckets based on a

merge criterion when the total number of buckets is limited to a predetermined budget. Gibbons

discloses merging buckets based on a merge criterion when the total number of buckets is limited

to a predetermined budget [col 10, lines 25-37]. It would have been obvious to one of ordinary

skill in the art at the time the invention was made to modify Ioannidis to include merging buckets

based on a merge criterion when the total number of buckets is limited to a predetermined budget

as taught by Gibbons for the purpose of maintaining a fixed number of buckets [Gibbons, Col 10,

line 33]. The skilled artisan would have been motivated to improve the invention of Ioannidis

per the above such that the high cost of recomputing the histogram might be avoided by keeping

the number of buckets fixed [Gibbons, col 10, lines 35-38].

Claim 13:

The combination of Ioannidis and Gibbons discloses the elements of claims 9 and 12 as noted above, however, regarding claim 13, Ioannidis does not disclose merging buckets based on a merge criterion when the total number of buckets exceeds a predetermined budget. Gibbons discloses merging buckets based on a merge criterion when the total number of buckets exceeds a predetermined budget [col 10, lines 25-37]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ioannidis to include merging buckets based on a merge criterion when the total number of buckets exceeds a predetermined budget as taught by Gibbons for the purpose of maintaining a fixed number of buckets [Gibbons, Col 10, line 33]. The skilled artisan would have been motivated to improve the invention of Kelling per the above such that the high cost of recomputing the histogram might be avoided by keeping the number of buckets fixed [Gibbons, col 10, lines 35-38].

Claim 14:

The combination of Ioannidis and Gibbons discloses the elements of claims 9, 12 and 13 as noted above and furthermore, Ioannidis discloses the merge criterion is a similar bucket density, wherein bucket density is based on the bucket frequency divided by the bucket volume [col 10, lines 1-12].

Claim 15:

The combination of Ioannidis and Gibbons discloses the elements of claim 9 as noted above, furthermore, Gibbons discloses the frequency of the parent bucket is diminished by the frequency of the child bucket [Fig 5].

Claim 17:

The combination of Ioannidis and Gibbons discloses the elements of claim 16 as noted

above. However, regarding claim 17, Ioannidis fails to disclose a rectangular bucket. Gibbons

discloses a rectangular bucket [Gibbons Figs 2 and 5, col 4, lines 39-50]. It would have been

obvious to one of ordinary skill in the art at the time the invention was made to modify Ioannidis

to include a rectangular bucket as taught by Gibbons for the purpose of providing a convenient

means of grouping attribute values of a database into subsets (buckets) and approximating true

attribute values and their frequency distributions based on summary statistics maintained in each

bucket [Gibbons, col 4, lines 39-49].

Claim 19:

The combination of Ioannidis and Gibbons discloses the elements of claim 16 as noted

above, however, regarding claim 19, Ioannidis does not disclose merging buckets based on a

merge criterion when the total number of buckets exceeds a predetermined budget. Gibbons

discloses merging buckets based on a merge criterion when the total number of buckets exceeds

a predetermined budget [col 10, lines 25-37]. It would have been obvious to one of ordinary

skill in the art at the time the invention was made to modify Ioannidis to include merging buckets

based on a merge criterion when the total number of buckets exceeds a predetermined budget as

taught by Gibbons for the purpose of maintaining a fixed number of buckets [Gibbons, Col 10,

line 33]. The skilled artisan would have been motivated to improve the invention of Kelling per

the above such that the high cost of recomputing the histogram might be avoided by keeping the

number of buckets fixed [Gibbons, col 10, lines 35-38].

Claim 22:

Ioannidis discloses a memory device that stores a database comprising multiple data records [col 5, lines 12-25], a computer having one or more processing units that execute a stored computer program [col 2, lines 57-65], said computer program including a rapid access memory store and an interface that couples the memory device that stores the database to the computer to allow records to be retrieved from the database [col 2, lines 57-65], examining the results of a query executed on the database [Fig 5, col 11, line 57 – col 12, line 24]

Ioannidis discloses the elements as noted above but does not disclose (b) creating at least one candidate hole in the histogram based on the results of the query such that the candidate hole has boundaries corresponding to a range of attribute values returned by the query and a frequency corresponding to a number of tuples returned by the query. Gibbons discloses creating at least one candidate hole in the histogram based on the results of the query such that the candidate hole has boundaries corresponding to a range of attribute values returned by the query and a frequency corresponding to a number of tuples returned by the query [Fig 4, 54]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ioannidis to include creating at least one candidate hole in the histogram based on the results of the query such that the candidate hole has boundaries corresponding to a range of attribute values returned by the query and a frequency corresponding to a number of tuples returned by the query as taught by Gibbons for the purpose of reducing the size of the bucket below a threshold value [col 10, lines 40-50]. The skilled artisan would have been motivated to improve the invention of Ioannidis per the above such that the histogram maintenance process ensures accuracy of the histogram [col 9, lines 24-28].

Furthermore, the combination of Ioannidis discloses (c) modifying the boundaries of

each candidate hole such that the boundaries of the modified hole are completely contained

within the boundaries of at least one existing parent bucket and do not partially intersect the

boundaries of any existing bucket [Gibbons, col 12, line 49, col 15, line 40-42]

Furthermore, the combination of Ioannidis and Gibbons discloses (d) creating a new child

bucket that has a child frequency in the histogram corresponding to each modified hole

[Gibbons, Fig 5].

Claims 6 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over the

combination of Kelling and Gibbons and further in view of US Pat No 6,507,840 issued to

Ioannidis et al (hereafter Ioannidis)

Claim 6:

The combination of Kelling and Gibbons discloses the elements of claims 1 and 5 as

noted above but does not disclose wherein the merge criterion is a similar bucket density,

wherein bucket density is based on the bucket frequency divided by the bucket volume.

Ioannidis discloses wherein the merge criterion is a similar bucket density, wherein bucket

density is based on the bucket frequency divided by the bucket volume [equi-depth histogram,

col 10, lines 1-11]. It would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify the combination of Kelling and Gibbons to include wherein the

merge criterion is a similar bucket density, wherein bucket density is based on the bucket

frequency divided by the bucket volume as taught by Ioannidis for the purpose of improving the

accuracy of approximation by grouping together similar attribute values [col 10, lines 1-10].

Claim 27:

The combination of Kelling and Gibbons discloses the elements of claims 24 and 26 as noted above but does not disclose wherein the merge criterion is a similar bucket density, wherein bucket density is based on the bucket frequency divided by the bucket volume. Ioannidis discloses wherein the merge criterion is a similar bucket density, wherein bucket density is based on the bucket frequency divided by the bucket volume [equi-depth histogram, col 10, lines 1-11]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Kelling and Gibbons to include wherein the merge criterion is a similar bucket density, wherein bucket density is based on the bucket frequency divided by the bucket volume as taught by Ioannidis for the purpose of improving the accuracy of approximation by grouping together similar attribute values [col 10, lines 1-10].

Response to Arguments

Applicant's arguments filed November 23, 2004 have been fully considered but they are moot based on above new grounds of rejection.

Examiner notes that applicant included the wrong serial number on arguments filed on November 23, 2004. Nevertheless, examiner has considered applicant's claim amendments and remarks with the incorrect serial number as they appeared to be pertinent to instant application. Applicant is requested to confirm that the previous response with the incorrect serial number is in fact applicant's intended response.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Etienne LeRoux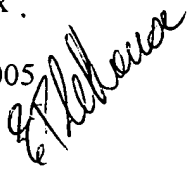 whose telephone number is (571) 272-4022. The examiner can normally be reached on Monday – Friday from 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic, can be reached on (571) 272-4023.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2100

Etienne LeRoux

February 10, 2005